

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056

In the matter of the petition of

F.S. Air Service, Inc.

for an exemption from § 25.857(b)(3) of Title
14, Code of Federal Regulations

Regulatory Docket No. FAA-2001-11150

GRANT OF EXEMPTION

By letter dated November 14, 2001, Mr. Gregory S. Grist, Director of Maintenance, F.S. Air Service, Inc., 6121 S. Airpark Drive, Anchorage, Alaska, petitioned for an exemption from the requirements of § 25.857(b)(3) of Title 14, Code of Federal Regulations (14 CFR) to permit installation of a passenger/cargo configuration by requiring a third crewmember to act as the smoke detection system, thus allowing the transportation of passengers and cargo on the main deck of the CASA Model C-212-CC and -CD series airplanes.

Sections of the FAR (Federal Aviation Regulations) affected:

Section 25.857(b) requires that: *A Class B cargo or baggage compartment is one in which- (3) There is a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station.*

Related Sections of the FAR:

Section 25.831(e) ***Ventilation.*** *Except as provided in paragraph (f) of this section, means must be provided to enable the occupants of the following compartments and areas to control the temperature and quantity of ventilating air supplied to their compartment or area independently of the temperature and quantity of air supplied to other compartments and areas:*

(1) The flight crew compartment.

(2) Crewmember compartments and areas other than the flight crew compartment unless the crewmember compartment or area is ventilated by air interchange with other compartments or areas under all operating conditions.

(f) Means to enable the flight crew to control the temperature and quantity of ventilating air supplied to the flight crew compartment independently of the temperature and quantity of ventilating air supplied to other compartments are not required if all of the following conditions are met:

(1) The total volume of the flight crew and passenger compartments is 800 cubic feet or less.

(2) The air inlets and passages for air to flow between the flight crew and passenger compartments are arranged to provide compartment temperatures within 5 degrees F. of each other and adequate ventilation to occupants in both compartments.

The petitioner's supportive information is as follows:

“In accordance with 14 CFR § 11.25, F.S. Air Service, Inc. hereby petitions the Federal Aviation Administration for exemption from the requirements outlined in 14 CFR § 25.857(b)(3), *There is a separate approved smoke detector or fire protection system to give warning at the pilot or flight engineer station.* This Request for Exemption is for CASA C-212-200 -CC and -CD series aircraft [official FAA certification designation - CASA Model C-212-CC and -CD series airplanes] to be modified by F.S. Air Service, Inc. to be operated in a passenger/cargo configuration, as outlined in Supplemental Type Certificate (STC) Project Number STO548AK-T.

Background

“As you are aware, F.S. Air Service has been attempting to certify a CASA C-212-CD in a configuration that can carry cargo and passengers on the main deck at the same time. Our efforts to obtain an STC have been unsuccessful, due in part to the following reasons:

“According to an *Issue Paper* originating from the New York ACO November 16, 1999, it is questionable whether the smoke detector in the aft cargo area meets the one minute detection criteria as required by 14 CFR § 25.858(a).

“In June of 2000 FSDO PMI's were instructed to ensure that each transport category, field-approved, cargo modified aircraft have readily available means to verify conformity. Basically, coordinated field approved AFM Supplements were no longer valid. F.S. Air Service was informed that this was a closed issue and that all other operators were affected equally.

“However one operator, who had obtained an STC in 1999, continued to operate their CASA in combi configuration. A second operator obtained an STC in mid 2001 and began operating their CASA's in this manner. F.S. Air Service submitted a request May 15, 2001 for an STC which was given a Project # and the PSCP process was started. This proceeded through the middle of July when Steve Mangiapane of the ANC ACO informed Greg Grist of F.S. Air Service that the project was put on hold. Citing problems with the existing STC's, we would have to wait until they were resolved.

“The delays encountered in obtaining an STC have negatively impacted F.S. Air Service and its customers in several ways. It has created a lack of confidence in F.S. Air Service within the fishing lodge and mining industry due to our perceived inability to complete the project. To accommodate our customers this year we had to load the passengers in a second aircraft. Meanwhile, our competitors continued to operate in the combi configuration.

Nature & Extent Of Relief Sought

“14 CFR § 25.857(b)(3) states that *“There is a separate approved smoke detector or fire protection system to give warning at the pilot or flight engineer station”*. In light of past performance of “In Flight” demonstrations of the smoke detector system on the CASA - 212 series aircraft, F.S. Air Service will add a third crewmember into the cabin when configured as a Combi. This crewmember would be a company employee trained in cargo loading, weight & balance, and fire detection/fighting. Additional fire fighting and breathing equipment will also be provided.

“14 CFR § 25.831(e) outlines the requirement for separate ventilating and heating air systems for the cockpit and other compartments, except when the total volume for the cockpit and passenger compartments is 800 cubic feet or less (as outlined in paragraph 14 CFR § 25.831(f)). The volume of the main cabin deck of the CASA C-212 is 770 cubic feet. However, when the cabin is partitioned off by the smoke barrier the volume of the cabin deck will be reduced by 280 or 350 cubic feet depending on which configuration is used. In this condition the aircraft will meet the requirements of 14 CFR § 25.831 (f).

“A description of the heating and ventilation system is as follows:

“HEATING

“An identical system on each engine bleeds compressed hot air from the turbine plenum. Each system ducts the air through a flow restrictor to a temperature-regulating valve located in the wing leading edge root. The heating lever located in the cockpit overhead panel manually controls this valve. The lever is connected to the valve by control rods and Teleflex cables. The lever positions the valve to regulate the hot bleed air that passes through it to mix with the cabin

recirculating air to control cabin and cockpit temperature. The regulated air flows through a shut off valve into a manifold, which delivers the air through ducts in the lower cabin wall and cockpit.

“VENTILATING

“Ram ambient air is ducted to the aircraft interior through five fuselage intakes. An intake on either side of the forward fuselage ducts fresh air to the cockpit. Each pilot has a diffuser to control the air. A separate intake ducts cooling air to the radio rack and electrical cabinet. An intake on either side of the center fuselage forward of the wing leading edge ducts individually controlled cabin diffusers.

“SMOKE AND FUME ELIMINATION

“From Section 2. Emergency Procedures of the C-212 AIRPLANE FLIGHT MANUAL:

1. Oxygen Masks	DONNED/100% OXY.
2. OXYGEN MAIN LINE VALVE	OPEN
3. Smoke Goggles	PUT ON
“4. HEATING Lever.....	CLOSE
- The crew should attempt to close off the source that might aggravate the smoke or fumes.	
“5. RAMP & CARGO DOORS Handle	OPEN AS REQD.
- Maximum permissible airspeed with cargo door open is 170 KIAS. Return handle to NORMAL after cargo door is opened.	
“6. PASSENGERS ACCESS DOOR	OPEN AS REQD.
“7. COCKPIT WINDOWS.....	OPEN AS REQD.

NOTE

“The cockpit windows should not be opened concurrently with the rear access door and/or the ramp and cargo doors as this may cause smoke to be drawn into the cockpit. Smoke concentration will dissipate in approximately 30 seconds.

Comments In The Public Interest

“Certain FAR 25 certificated aircraft, and the CASA C-212 in particular, are used to transport personnel and their belongings to remote locations in Alaska. F.S. Air Service only operates the CASA as an “On Demand Charter” with all the contents in the aircraft

belonging to or pertinent to the occupants in the aircraft. This is a unique aircraft operating in a unique environment. Our customers are typically hunting and fishing lodges and mining camps. Air service is the only means of transportation into these remote locations.

“The addition of a third crewmember that exists for safety functions will enhance air commerce without a significant economic burden. As it stands now, two aircraft must be used to separate the passengers from their cargo.

Notice and Public Procedure Provided

On January 16, 2002, the FAA published a notice of the petition for exemption in the Federal Register and requested comments from the public. The single comment received was in favor of the intent of the petition, although the commenter did not concur that a third crewmember was needed or that a smoke barrier should be required.

FAA’s Analysis of the Petition

The petitioner is requesting relief from the requirement that there be a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station. The petitioner has proposed the addition of a trained third crewmember whose function would be to monitor and take appropriate action in the event of a fire in the cargo area. The FAA recognizes the unique issues with regard to this type of operation in the Alaskan environment and concurs that the additional crewmember to continuously monitor the cargo area for smoke and fire does provide an adequate level of safety with regard to smoke and/or fire detection when that crewmember is properly equipped with approved firefighting equipment and has adequate visual access (e.g., a viewing panel in the smoke barrier) and environmental conditions (e.g., lighting, access, etc.).

The third crewmember only provides relief from the requirements of 14 CFR § 25.857 (b)(3). All other applicable regulations must be complied with. In particular, compliance with 14 CFR § 25.857 (b)(1) and (2) is still required. There must be sufficient access to the cargo area in flight to enable the crewmember to effectively reach any part of the compartment with the contents of a hand fire extinguisher and a smoke barrier must be installed to prevent hazardous quantities of smoke from entering the passenger compartment or the flight deck.

The Grant of Exemption

In consideration of the foregoing, I find that a grant of exemption is in the public interest and will not adversely affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 and 44701, delegated to me by the Administrator, the petition of F.S. Air Service, Inc., 6121 S. Airpark Drive, Anchorage, Alaska, for an exemption

from the requirement of 14 CFR § 25.857 (b)(3) to permit installation of a passenger/cargo configuration by requiring a third crewmember trained in smoke detection and smoke detection systems, thus allowing the transportation of passengers and cargo on the main deck of the CASA Model C-212-CC and -CD series airplanes, is hereby granted, with the following provisions:

1. A third trained crewmember must be on board to continuously monitor the cargo area for smoke and fire.
2. The crewmember must be properly equipped with approved fire extinguishing and breathing equipment and fire gloves as required by the regulations.
3. The cargo compartment must be equipped to provide adequate visual access and environmental conditions for the crewmember to be able to evaluate conditions in the cargo compartment and be able to take appropriate action.

Issued in Renton, Washington, on May 23, 2002.

/s/Ali Bahrami
Ali Bahrami
Acting Manager
Transport Airplane Directorate
Aircraft Certification Service